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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,628	09/22/2003	Mats A. Brenner	Honeywell No. H0004494	1190

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HONEYWELL INTERNATIONAL INC.
101 COLUMBIA ROAD
P O BOX 2245
MORRISTOWN, NJ 07962-2245

EXAMINER

MULL, FRED H

ART UNIT PAPER NUMBER

3662

DATE MAILED: 02/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/667,628

Applicant(s)

BRENNER, MATS A.

Examiner

Fred H. Mull

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-18 and 20-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-18 and 20-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Specification

2. The disclosure is objected to because of the following informalities:
On p. 6, line 18, "LAASsystem" should be --LAAS system--.
Appropriate correction is required.

Claim Objections

3. Claim(s) 3 is/are objected to under 37 CFR 1.75. The claim(s) recites the limitations " the value P_w " and "the value P_n " in lines 2 and 4, respectively. There is insufficient antecedent basis for this limitation in the claim. Correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claim 1 is rejected under 35 U.S.C. 102(a) as being anticipated by Legrand.

Legrand discloses:

receiving at least one global positioning satellite radio signal (p. 1, Introduction, 1st ¶);

determining a signal noise ratio of the satellite radio signal and calculating from the signal-to-noise ratio a low power error contribution (p. 2, Model of Digital Tracking Loops, 1st ¶; p. 4, Total Tracking Error, 1st ¶);

in calculating a total error based at least in part on the low power condition error contribution (p. 4, ¶ including equations 26 and 27).

5. Claims 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Parkinson.

In regard to claim 20, Parkinson discloses:

a wide band power estimator operative to measure an average wide band power (p. 390, last ¶; p. 391, equation 104);

a narrow band power estimator operative to measure an average narrow band power (p. 390, last ¶; p. 391, equation 105);

a signal-to-noise ratio module operative to calculate a signal-to-noise ratio from the estimated wide band power and the estimated narrow band power (p. 391, equation 106); and

a low-power error module operative to calculate, from the signal-to-noise ratio, an error contribution attributable to a low-power condition (p. 392, 1st ¶).

In regard to claim 21, Parkinson further discloses:

the signal-to-noise ratio module further comprises confidence limit logic operative to determine a lower confidence limit and wherein the signal-to-noise ratio calculated by the signal-to-noise ratio logic is the lower confidence limit (p. 392, sentence following equation 116).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Legrand, as applied to claim 1, in further view of Parkinson.

In regard to claim 2, Legrand discloses the use of GPS signal to noise ratio (p. 2, Model of Digital Tracking Loops, 1st ¶), but does not disclose the details of how it is calculated.

Parkinson discloses the details of measuring the GPS signal to noise ratio. Specifically, Parkinson discloses:

measuring a wide band power of the satellite radio signal over a first time period and a narrow band power of the satellite radio signal over a second time period (p. 390, last ¶);

calculating an estimated signal-to-noise ratio based on the narrow band power and the wide band power (p. 391, equation 106).

It would have been obvious to use the known method of calculation signal to noise ratio of Parkinson in order to calculate signal to noise ratio in Legrand.

In regard to claim 3, Parkinson further discloses a wide band power includes averaging the wide band power over the first time period to obtain a value P_w and wherein measuring a narrow band power includes averaging the narrow band power over the second time period to obtain the a P_n (p. 391, equations 104 and 105).

In regard to claim 4, Parkinson further discloses the first time period has a length T , the second time period has a length that is M times as long as T , and the signal-to-noise ratio is calculated according to the given equation (p. 390, last ¶; p. 392, equation 117, where the μ_{NP} term is equivalent to P_n/P_w , and thus the equation is equivalent to the given equation).

In regard to claims 5-8, Parkinson further discloses calculating a lower confidence limit (p. 392, sentence following equation 116).

7. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Legrand, as applied to claim 1, and in further view of either one of Loh and Braff.

Legrand discloses minimizing total error, but fails to disclose issuing an alert if the total error exceeds an alert limit.

Loh (col. 8, lines 24-34) and Braff (Figs. 2 and 4) each disclose issuing an alert if the total error exceeds an alert limit.

It would have been obvious to include an alert for the situations where the error minimizing procedure of Legrand fails to minimize the error enough for the resulting measurement to be accurate enough for a user to have confidence in it, particularly when it will be used for landing systems, where human safety is involved.

8. Claims 12-18 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Legrand and Parkinson, as applied to claims 2-8, and in further view of either one of Loh and Braff.

Legrand discloses minimizing total error, but fails to disclose issuing an alert if the total error exceeds an alert limit.

Loh (col. 8, lines 24-34) and Braff (Figs. 2 and 4) each disclose issuing an alert if the total error exceeds an alert limit.

It would have been obvious to include an alert for the situations where the error minimizing procedure of Legrand fails to minimize the error enough for the resulting measurement to be accurate enough for a user to have confidence in it, particularly when it will be used for landing systems, where human safety is involved.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred H. Mull whose telephone number is 703-305-1250. The examiner can normally be reached on M-F 9:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H. Tarcza can be reached on 703-360-4171. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Effective approximately April 2005, the following new telephone numbers will be in effect: Fred H. Mull: 571-272-6975, Thomas H. Tarcza: 571-272-6979.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Fred H. Mull
Examiner
Art Unit 3662

fhm


THOMAS H. TARCZA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600